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Clm to

~~AMENDMENT TO THE CLAIMS~~

1. (Amended) An ice detector for providing a signal indicating ice formation, said ice detector comprising a probe assembly protruding into an airstream and supported relative to a surface of a structure subject to icing, the airstream moving past said surface and said probe assembly, and said probe assembly comprising an airfoil cross sectional shape with a rounded section of the probe assembly facing in the direction of airflow and mounted on the structure in a position to [including sections forming structural portions that] provide an area of lower pressure [to]on a surface portion of the probe assembly than on the structure resulting in lower temperature on the surface[s] portion of the airfoil shaped probe assembly than on the structure.

[2. The ice detector of claim 1, wherein sections of said probe assembly comprises a body member positioned adjacent to at least one of the upstream and downstream sides of the probe assembly.]

3. (Amended) The ice detector of claim [2]19, wherein said body member is positioned on an upstream side of a cylindrical probe section, said body member having an edge tapered from a surface on which the probe assembly is mounted toward an outer end of the cylindrical probe section.

4. (Amended) The ice detector of claim [2]19, wherein probe assembly includes a cylindrical probe section and wherein said body member is positioned on a downstream side of the cylindrical probe section, and extends along a length of the cylindrical probe section a selected amount.

5.(Original) The ice detector of claim 4, wherein said body member extends substantially 60% to 80% of the length of the cylindrical probe section along an edge of the body member adjacent to the cylindrical probe section.

6.(Original) The ice detector of claim 5, wherein said body member has a width that is a substantial portion of the diameter of the cylindrical probe section, and an edge of the body member being recessed to receive a portion of the cylindrical probe section to maintain a space between the cylindrical probe section and the leading edge.

7.(Original) The ice detector of claim 6, wherein the space between the leading edge of the body member and a surface of the cylindrical probe section is in the range of 0.025 inches.

[8. The ice detector of claim 1, wherein said probe assembly comprises an airfoil cross sectional shape with a rounded section of the probe assembly facing the direction of airflow.]

9.(Amended) The ice detector of claim [8]1, wherein said airfoil cross sectional shape probe assembly is positioned on an aircraft comprising the structure, the airfoil cross-sectional shape probe assembly having an angle of attack that produces a lower pressure than an aircraft wing.

10.(Original) The ice detector of claim 1, wherein said probe assembly includes a structure that maintains a portion of the probe assembly surface at a lower temperature than a protected surface of the aircraft.

11.(Original) The ice detector of claim 1, wherein the probe assembly includes a probe that has a longitudinal axis protruding into the airstream, the axis being inclined at an angle other than perpendicular to a direction of flow of the airstream moving past the probe.

12.(Original) The probe assembly of claim 11, wherein the longitudinal axis inclines so an outer end of the probe inclines in direction into the airstream.

13.(Original) The probe assembly of claim 11, wherein an outer end of the probe inclines in a downstream direction.

14.(Original) An ice detector for a structural airfoil comprising a probe assembly extending from an air vehicle and having a longitudinal length generally parallel to the longitudinal length of a structural airfoil of the air vehicle and said probe assembly having an airfoil-shaped cross section and being oriented so that the pressure field on the probe assembly airfoil shape provides a lower minimum pressure than a minimum pressure on a structural airfoil of the air vehicle at a desired angle of attack of the structural airfoil.

15.(Original) The ice detector of claim 14, wherein said structural airfoil comprises a wing, and the angle of attack of the airfoil-shaped cross section of the probe assembly is greater than the angle of attack of the aircraft wing, and siad probe assembly having a longitudinal axis extending generally parallel to a spanwise dimension of the wing.

16. (Original) The ice detector of claim 14, wherein the probe assembly airfoil-shaped cross section is positioned to provide a critical temperature warmer than the critical temperature of the surface to be protected, the critical temperature being defined as the temperature below which ice will form on a structure in the airstream.

17. (Amended) A method of providing advance warning of formation of ice on a structure comprising [of an ice detector probe assembly] placing [the] an ice detector probe assembly having an airfoil shaped cross section, in a position in an airstream [,] [configuring and positioning the ice detector probe assembly] so the pressure field around the ice detector probe assembly causes a lower temperature at a location on the surface of the ice detector probe assembly than the temperature on the structure.

18. (Amended) The method of claim 17, wherein the ice detector probe assembly [has an airfoil shaped cross section and is] is mounted on an aircraft having a wing with an airfoil shape, and including orienting the airfoil-shaped cross section of the ice detector probe assembly at an angle of attack so that at a selected angle of attack of the wing the airfoil-shaped cross section probe assembly has a lower pressure field at a location on the airfoil-shaped section probe assembly than on the wing.

19. (New) An ice detector for providing a signal indicating ice formation, said ice detector comprising a probe assembly protruding into an air stream and supported relative to a surface of a structure subject to icing, the air stream moving past said surface and said probe assembly, said probe assembly including a probe member, and a generally planar body member positioned adjacent to at least one of upstream and downstream sides of the probe assembly, whereby a lower area of pressure is created on a surface portion of the probe assembly and body member than on the structure, resulting in lower temperature on the surface portion of the probe assembly than on the structure.

20. (New) An ice detector for providing a signal indicating ice formation on an aircraft wing subject to icing, said ice detector comprising a probe assembly protruding into an air stream from the aircraft and supported relative to the wing, said probe assembly including sections forming structural portions that provide an area of lower pressure on a surface portion of the probe assembly than on the wing when the angle of the attack of the air relative to the wing exceeds an angle of attack wherein the pressure coefficient on the wing is less than about -3.